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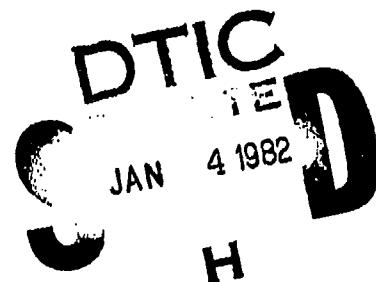
BIBLIOGRAPHY OF SOVIET LASER DEVELOPMENTS

No. 49

SEPTEMBER - OCTOBER 1980

Date of Report

September 16, 1981



**Vice Director for Foreign Intelligence
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20. ABSTRACT This is the Soviet Laser Bibliography for September-October 1980, and is No. 49 in a continuing series on Soviet laser developments. The coverage includes basic research on solid state, liquid, gas, and chemical lasers; components; nonlinear optics; spectroscopy of laser materials; ultrashort pulse generation; crystal growing; theoretical aspects of advanced lasers; and general laser theory. Laser applications are listed under biological effects; communications; beam propagation; computer technology; holography; laser-induced chemical reactions; measurement of laser parameters; laser measurement applications; laser-excited optical effects; laser spectroscopy; beam-target interaction; and plasma generation and diagnostics.		

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Introduction

This bibliography has been compiled under an interagency agreement as a continuing effort to document current Soviet-bloc developments in the quantum electronics field. The period covered is September-October 1980, and includes all significant laser-related articles received by us in that interval. The bulk of the entries come from the approximately 30 periodicals which are known to publish the most significant findings in Soviet laser technology. Citations from the Russian Reference Journals are also included. Laser items from the popular or semipopular press are generally omitted.

For convenience we have abbreviated frequently cited source names; a source abbreviations list and an author index are included. All sources cited with no parenthetical notation are available at the Library of Congress. A parenthetical entry (RZh, KL) indicates the secondary source in which the citation was found as a bibliographic entry or abstract, but for which the original source is not currently available at the Library. The authors' affiliations are indicated by the numbers in parentheses following the authors' names in the text and are listed in the Author Affiliations List. New affiliations are assigned a new number and are added to a cumulative list which includes all affiliations from 1969 to the present. Only those affiliations which appear in this issue are listed in this issue's Author Affiliations List.

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SOVIET LASER BIBLIOGRAPHY, SEPTEMBER - OCTOBER 1980

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I. BASIC RESEARCH

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684. Problemy sovremennoy radiotekhniki i elektroniki (Problems of modern radioengineering and electronics). Edited by V.A. Kotel'nikov (15). Institut radiotekhniki i elektroniki AN SSSR. Moskva, Nauka, 1980, 480 p.
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688. Sovremennyye problemy ellipsometrii (Current problems of ellipsometry). Edited by A.V. Rzhанov (10). Institut fiziki poluprovodnikov SOAN. Novosibirsk, Nauka, 1980, 192 p.

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1979, 221 p. (RZhGeofiz, 10/80, 10B24)

IV. SOURCE ABBREVIATIONS

(CIRC Codens)

APH	(APAHA)	Acta physica Academiae scientiarum hungaricae
APP	(ATPLB)	Acta physica polonica
BWAT	(BWATA)	Biuletyn Wojskowej akademii technicznej J. Dabrowskiego
CCF	(CKCFA)	Ceskoslovensky casopis pro fysiku
CJP	(CZYPA)	Czechoslovak Journal of Physics
DAN Arm	(DANAA)	Akademiya nauk Armyanskoy SSR. Doklady
DAN B	(DBLRA)	Akademiya nauk Belorusskoy SSR. Doklady
DAN SSSR	(DANKA)	Akademiya nauk SSR. Doklady
DAN Ukr	(DUKAB)	Akademiya nauk Ukrayins'koyi RSR. Dopovidi. Seriya A. Fizyko-matematychni ta tekhnichni nauky
FAiO	(IFAOA)	Akademiya nauk SSR. Izvestiya. Fizika atmosfery i okeana
FGiV	(FGVZA)	Fizika gorennya i vzryva
FikHOM	(FKOMA)	Fizika i khimiya obrabotka materialov
FikHS	(FKSTD)	Fizika i khimiya stekla
F-KhMM	(FKMMA)	Fiziko-khimicheskaya mekhanika materialov
FMM	(FMMTA)	Fizika metallov i metallovedeniye
FTP	(FTPPA)	Fizika i tekhnika poluprovodnikov
FTT	(FTVTA)	Fizika tverdogo tela
IAN Az	(IAFMA)	Akademiya nauk Azerbaydzhanskoy SSR. Izvestiya. Seriya fiziko-tekhnicheskikh i matematicheskikh nauk
IAN B	(VABFA)	Akademiya nauk Belorusskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk
IAN Fiz	(IANFA)	Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya
IAN Turk	(ITUFA)	Akademiya nauk Turkmenskoy SSR. Izvestiya. Seriya fiziko-tekhnicheskikh, khimicheskikh i geologicheskikh nauk
IAN Uz	(IUZFA)	Akademiya nauk Uzbeksoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk

I-FZh	(INFZA)	Inzhenerno-fizicheskiy zhurnal
IVUZ Fiz	(IVUFA)	Izvestiya vysshikh uchebnykh zavedeniy. Fizika
IVUZ Priboro	(IVUBA)	Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye
IVUZ Radioelektr (IVUZB)		Izvestiya vysshikh uchebnykh zavedeniy. Radioelektronika
IVUZ Radiofiz	(IVYRA)	Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika
JTP	(JTPHD)	Journal of Technical Physics [Poland]
KE	(KVEKA)	Kvantovaya elektronika
KhVE	(KHKVA)	Khimiya vysokikh energiy
KiK	(KNKTA)	Kinetika i kataliz
KL	(KNLTA)	Knizhnaya letopis'
KLDV	(KLDVA)	Knizhnaya letopis'. Dopolnitel'nyy vypusk
Kristal	(KRISA)	Kristallografiya
KSpF	(KRSFA)	Kratkiye soobshcheniye po fizike
MITOM	(MTOMA)	Metallovedeniye i termicheskaya obrabotka materialov
MZhIG	(IMZGA)	Akademiya nauk SSSR. Izvestiya. Mekhanika zhidkosti i gaza
NM	(IVNMA)	Akademiya nauk SSSR. Izvestiya. Neorganicheskiye materialy
OIS	(OPSPA)	Optika i spektroskopiya
OMP	(OPMPA)	Optiko-mekhanicheskaya promyshlennost'
Opt app	(OPAPB)	Optica applicata [Poland]
Otkr izobr	(OIPOV)	Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki
PSS	(PSSAB) (PSSBB)	Physica Status Solidi (A). Applied Research (B). Basic Research
PTE	(PRTEA)	Pribory i tekhnika eksperimenta
RiE	(RAELA)	Radiotekhnika i elektronika
Roz elektr	(RZETA)	Rozprawy elektrotechniczne
RZhF	(RZFZA)	Referativnyy zhurnal. Fizika

RZhGeofiz	(GZGFA)	Referativnyy zhurnal. Geofizika
RZhMekh	(RZMKA)	Referativnyy zhurnal. Mekhanika
RZhRadiot	(RZRAB)	Referativnyy zhurnal. Radiotekhnika
Sb1	Sbornik	Kvantovaya elektronika, no. 19, Kiyev, 1980.
Sb2		Issledovaniya v oblasti izmereniy vremeni i chastoty. Moskva, 1980.
Sb3		Sverkhvysokochastotnyye ustroystva izlucheniya i obrabotki radiosignalov. Kazan', 1979.
Sb4		Vazhneyshiye rezul'taty nauchno-issledovatel'nykh rabot 1978 goda. Institut vysokikh temperatur AN SSSR. Moskva, Nauka, 1979.
Sb5		Khimicheskaya fizika protsessov goreniya i vzryva. Kinetika khimicheskikh reaktsii. Vsesoyuznyy simpozium po goreniyu i vzryvu. 6th. Alma-Ata, 23-26 Sep 1980. Materialy. Chernogolovka, 1980.
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Sb7		Konferentsiya molodykh uchenykh. 5th. 1980. Materialy. Moskovskiy fiziko-tekhnicheskii institut, 1980. Deposit at VINITI, no. 2849-80, 7 July 1980.
Sb8		Problemy sovremennoy radiotekhniki i elektroniki. Institut radiotekhniki i elektroniki AN SSSR. Moskva, Nauka, 1980.
Sb9		Nauchno-tekhnicheskaya konferentsiya po informatsionnoy akustike. 5th. Trudy. Moskva, 1980.
Sb10		Emissionnaya i kvantovaya elektronika. Golografiya. Atomnaya radiospektroskopiya. Leningrad, Nauka, 1979.
Sb11		Vsesoyuznaya konferentsiya po besserebryannym i neobychnym fotograficheskim protsessam. 3rd. 1980. Vil'nyus, 1980.
Sb12		Fizika soyedineniy A ³ B ⁵ . Vsesoyuznaya konferentsiya. Materialy. Leningrad, 1979.
Sb13		Optoelektronika, kvantovaya elektronika i prikladnaya optika. Institut kibernetiki AN GruzSSR. Tbilisi, Metsniyereba, 1980.

- Sb14 Acta Universitatis Palackianae Olomucensis. Facultas rerum naturalium, v. 61, Olomouc, 1979.
- Sb15 Spektroskopicheskiye metody issledovaniya tverdogaznykh soedineniy. Ural'skiy nauchnyy tsentr AN SSSR. Sverdlovsk, 1979.
- Sb16 Tekhnika sredstv svyazi. Seriya Tekhnika radioveshchatel'nogo priyema i akustiki, no. 2, 1979.
- Sb17 Issledovaniye atmosfernogo aerolya metodami lazernogo zondirovaniya. Institut optiki atmosfery SOAN. Novosibirsk, Nauka, 1980.
- Sb18 Zeszyty naukowe Uniwersytet Lodzkiej, ser. 2, no. 26, 1979.
- Sb19 Khimicheskaya fizika protsessov goreniya i vzryva. Goreniye kondensirovannykh i geterogennykh sistem. Vsesoyuznyy simpozium po goreniyu i vzryvu. 6th. Alma-Ata, 23-26 Sep 1980. Materialy. Chernogolovka, 1980.
- Sb20 Khimicheskaya fizika protsessov goreniya i vzryva. Detonatsiya. Vsesoyuznyy simpozium po goreniyu i vzryvu. 6th. Alma-Ata, 23-26 Sep 1980. Materialy. Chernogolovka, 1980.
- Sb21 Sovremennyye problemy ellipsometrii. Institut fiziki poluprovodnikov SOAN. Novosibirsk, Nauka, 1980.
- Sb22 Sovershenstvovaniye tekhnologii i sredstva uglebogashcheniya. Moskva, 1980.
- Sb23 Fizicheskaya elektronika, no. 21, L'vov, 1980.
- Sb24 Zeszyty naukowe Politechniki Lodzkiej, no. 349, 1979.
- Sb25 Vsesoyuznyy simpozium po modul'nym informatsionno-vychislitel'nym sistemam. 2nd. Dubna, 1978. Trudy, Moskva, 1980.
- Sb26 Vsesoyuznoye soveshchaniye po matematicheskomu modelirovaniyu i upravleniyu vysokotemperaturnymi protsessami v tsiklonnykh i vikhrevykh apparatakh, 21-33 May 1980. Tezisy dokladov. Odessa, 1980.
- Sb27 Fizika kondensirovannogo sostoyaniya. Kiyev, 1980.
- Sb28 Fizicheskiye protsessy pri goreni i vzryve. Moskva, 1980.
- Sb29 Dinamika izluchayushchego gaza, no. 3, Moskva, 1980.
- SCF (SCEFA) Studii si cercetari de fizica
- TKiT (TKTEA) Tekhnika kino i televedeniya
- Tr1 Trudy Tallinskiy politekhnicheskii institut. Trudy, no. 492, 1980.

Tr2		Novosibirskiy institut inzhenerov geodezii, aerofotos"yemki i kartografii. Trudy, no. 6/46, 1979.
Tr3		Fizicheskii institut AN SSSR. Trudy, no. 124, 1980.
Tr4		NII gidrometeorologicheskogo priborostroyeniya. Trudy, no. 39, 1980.
Tr5		Glavnaya geofizicheskaya observatoriya. Trudy, no. 445, 1980.
Tr6		VNI kinofotoinstitut. Trudy, no. 99, 1980.
TVT	(TVTYA)	Teplofizika vysokikh temperatur
UFN	(UFNAA)	Uspekhi fizicheskikh nauk
UFZh	(UFIZA)	Ukrainskiy fizicheskii zhurnal
VBU	(VBMFA)	Belorusskiy universitet. Vestnik. Seriya 1. Matematika, fizika, mekhanika
VLU	(VLUBF)	Leningradskiy universitet. Vestnik. Fizika, khimiya
VMU	(VMUFA)	Moskovskiy universitet. Vestnik. Fizika, astronomiya
ZhETF	(ZEIFA)	Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhETF P	(ZFPRA)	Pis'ma v Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhFKh	(ZFKHA)	Zhurnal fizicheskoy khimii
ZhN1PF1K	(ZNPFA)	Zhurnal nauchnoy i prikladnoy fotografii i kinematografii
ZhNKh	(ZNOKA)	Zhurnal neorganicheskoy khimii
ZhPMTF	(ZPMFA)	Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki
ZhPS	(ZPSBA)	Zhurnal prikladnoy spektroskopii
ZhTF	(ZTEFA)	Zhurnal tekhnicheskoy fiziki
ZhTF P	(PZTFD)	Pis'ma v Zhurnal tekhnicheskoy fiziki
ZhVMMF	(ZVMFA)	Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki
ZL	(ZVDLA)	Zavodskaya laboratoriya

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334. Scientific Research Institute of Applied Physical Problems at Belorussian State University (NII prikladnykh fizicheskikh problem pri Belorusskom GU).
335. Institute of Electrochemistry, AN SSSR (Institut elektrokhimii AN SSSR).
336. Scientific Research Institute of Nuclear Physics, Electronics and Automation at Tomsk Polytechnic Institute (NII yadernoy fiziki, elektroniki i avtomatiki pri Tomskom politekhnicheskom institut).
363. Kiev State Pedagogical Institute (Kiyevskiy gos pedagogicheskiy institut).
370. Institute of Colloid Chemistry and Chemistry of Water, AN UkrSSR (Institut kolloidnoy khimii i khimii vody AN UkrSSR).
384. All Union Scientific Research, Planning and Design Institute of Metallurgical Machine Building (VNI i proyekt konstruktorskiy institut metallurgicheskogo mashinostroyeniya).
390. Novosibirsk Electrotechnical Institute of Communications (Novosibirskiy elektrotekhnicheskiy institut svyazi).
396. "Optika" Special Design Bureau for Scientific Instrument Manufacture, Siberian Branch, AN SSSR (Spetsial'noye konstruktorskoye byuro nauchnogo priborostroyeniya "Optika" SOAN).

424. Voroshilovgrad Mechanical Engineering Institute (Voroshilovgradskiy mashinostroitel'nyy institut).
426. Institute of Applied Physics, AN SSSR, Gor'kiy (Institut prikladnoy fiziki AN SSSR).
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440. Moscow Automobile Plant im Likhachev (Moskovskiy avtomobil'nyy zavod im Likhacheva).
451. All Union Correspondence Institute of the Textile and Light Industry, Moscow (Vsesoyuznyy zaachnyy institut tekstil'noy i legkoy promyshlennosti).
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466. Institute of High-Current Electronics, Siberian Branch, AN SSSR, Tomsk (Institut sil'notochnoy elektroniki SOAN).
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507. Institute of Solid State and Semiconductor Physics, AN BSSR, Minsk (Institut fiziki tverdogo tela i poluprovodnikov AN BSSR).
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540. Moscow State Correspondence Pedagogical Institute (Moskovskiy gos zaachnyy pedagogicheskiy institut).
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546. All Union Correspondence Institute of the Food Industry, Moscow (Vsesoyuznyy zaachnyy institut pishchevoy promyshlennosti).
550. Geological Institute of the Buryat Branch of the Siberian Branch, AN SSSR, Ulan Ude (Geologicheskiy institut Buryatskogo filiala SOAN).
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555. Dnepropetrovsk Mining Institute (Dnepropetrovskiy gornyy institut).
570. Donetsk Polytechnic Institute (Donetskiy politekhnicheskiy institut).
571. Kiev Branch of the Odessa Electrotechnical Institute of Communications (Kiyevskiy filial Odesskogo elektrotekhnicheskogo instituta svyazi).
572. Kuybyshev Branch of the Physics Institute, AN SSSR (Kuybyshevskiy filial Fizicheskogo instituta AN SSSR).
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